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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,072	10/14/2003	Frank Olschewski	21295.66 (H5686US)	4347

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EXAMINER	
FINEMAN, LEE A	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/685,072	OLSCHEWSKI, FRANK	
	Examiner	Art Unit	
	Lee Fineman	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to an amendment filed 20 September 2005 in which claims 1, 3, 7 and 9 were amended. Claims 1-10 are pending.

Drawings

1. A corrected drawing for fig. 5 was received on 20 September 2005. This drawing is acceptable.

2. The drawings are objected to because the text in figure 2 is not in English. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1-10 are objected to because of the following informalities:

Regarding claims 1 and 7, there is a newly added limitation "scanning module with a gimbal-mounted scanning mirror which guides the illuminating light beam over or through **a specimen**;" Is this the same specimen as the microscope specimen referenced in the preamble? For the purposes of examination, it will be taken to be the same specimen. The dependent claims inherit the deficiencies of the claims from which they depend.

Regarding claims 3 and 9, the limitation "the scan parameters include at least one image format, a position of the XYZ stage..." is unclear as it still does not distinguish whether or not all parameters must change. The examiner recommends --the scan parameters include at least one of image format, a position of the XYZ stage...--. The Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Newly amended independent claims 1 and 7 now include the limitation "a computer

system which has a means for calculating signatures of a recorded multidimensional image having a number of dimensions **varying between** 2 and higher than 3." Nothing in the disclosure describes varying between a number of dimensions, only that higher-dimensional images can also be acquired (see especially sections [12] and [13] of the specification). Therefore, this limitation including having a number of dimensions **varying between** 2 and higher than 3 is considered to be new matter. The dependent claims inherit the deficiencies of the claims from which they depend.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Newly amended independent claims 1 and 7 now include the limitation "a computer system which has a means for calculating signatures of a recorded multidimensional image having a number of dimensions **varying between 2 and higher than 3**." It is unclear exactly what is meant by varying between a two-dimensional image and, for example, a five-dimensional image. Does the means calculate a signature of one image and then switch to the other image? Does the two-dimensional image vary from the five-dimensional image in that none of the degrees of freedom are the same? The dependent claims inherit the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luck et al., US 5,257,182 in view of Murakami et al., US 4,639,604.

Regarding claims 1 and 4, Luck et al. disclose in fig. 1 a scanning microscope system (12) for detecting and compensating for changes within a recorded image content of a microscopic specimen (16) comprising a microscope (12) that defines an illuminating light beam (to sample) and a detected light beam (to cameral 20), at least one objective (in 18), an XYZ stage (14), a scanning module (see fig. 2), a detector module having at least one detector (20), and a computer system (22, also see fig. 3) which has a means (42, 44, 46) for calculating signatures of a recorded multidimensional image (column 5, line 25-column 6, line 32) and a means (42, 44, 46) for calculating statistical signature parameters (column 7, line 1-column 13, line 16, fig. 5); multiple positioning motors and actuators are provided on the microscope (in 14 and 18); and at least one software module (column 6, lines 23-28), which supplies to the positioning motors or actuators control signals that can be ascertained from the signature parameters (see at least column 3, lines 38-46 and column 14, lines 13-22). Regarding the multidimensional image having a number of dimensions varying between two and higher than three, in as much as the claims are able to be understood in light of the 35 U.S.C 112 rejection made above the rejection applies. Luck et al. discloses the claimed invention except for the scanning module including a gimbal-mounted scanning mirror which guides the illuminating light beam over or through the specimen. Murakami et al. teaches that a moving stage and a gimbal-mounted mirror (e.g. a galvanomirror) are art-recognized equivalents in the microscope art for optical beam scanning (column 21, lines 6-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made use any of the above scanning techniques in the system of Luck et al., including the claimed gimbal-mounted scanning mirror to guide the illumination beam in a specific scanning pattern.

Regarding claims 7 and 8, Luck et al. further disclose a method for detecting and compensating for changes within a recorded image content (fig. 4) of a microscope specimen (16) using a microscope (12), comprising the steps of: a) scanning a specimen with an illuminating light beam and recording multiple image points for generation of a multidimensional image (figs. 2 and 4); b) calculating signatures of the recorded multidimensional image (fig. 5); c) calculating statistical signature parameters from the recorded signatures (column 7, line 1-column 13, line 16, fig. 5); d) observing and ascertaining the changes in the statistical signature parameters (fig. 5); and e) interpreting the changes in the signatures and converting them into signals for positioning motors or actuators that are provided in the microscope system (see at least column 3, lines 38-46 and column 14, lines 13-22); wherein the interpretation of the changes in the signatures, and the conversion into signals for positioning motors or actuators, are accomplished by means of a software module (column 6, lines 23-28) that records and observes changes in the signatures (see figs. 4 and 5), derives signature parameters (fig. 5), and ascertains control signals (column 14, lines 13-22) from the signature parameters on the basis of an inference method (fig. 5). Regarding the multidimensional image having a number of dimensions varying between two and higher than three, in as much as the claims are able to be understood in light of the 35 U.S.C 112 rejection made above the rejection applies. Luck et al. discloses the claimed invention except for the scanning module including a gimbal-mounted scanning mirror which guides the illuminating light beam over or through the specimen. Murakami et al. teaches that a moving stage and a gimbal-mounted mirror (e.g. a galvanomirror) are art-recognized equivalents in the microscope art for optical beam scanning (column 21, lines 6-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made use any of the above scanning techniques in the system of Luck et al., including the claimed gimbal-mounted scanning mirror to guide the illumination beam in a specific scanning pattern.

Regarding claim 2, 6 and 10, Luck et al. further disclose wherein the software module records and observes changes in the signatures (see figs. 4 and 5), derives signature parameters (see fig. 5), and ascertains control signals (column 14, lines 13-22) from the signature parameters on the basis of an inference method (fig. 5) and wherein the signature parameters encompass at least one statistical parameter (minimum and maximum, see column 9, lines 29-39) of the signature interpreted as a distribution function, wherein the distribution function is mean or variance or moments or quartiles or skewness or median or maximum and minimum.

Regarding claims 3 and 9, Luck et al. further disclose wherein changes in scan parameters can be determined from the ascertained signature parameters (column 8, lines 9-16 and column 14, lines 13-22); and the scan parameters include at least one of image format, a position of the XYZ stage, an electronic zoom, an objective selection, galvanometer positions, and spectral scan bands (column 8, lines 9-16 and column 14, lines 13-22).

11. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Luck et al. in view of Murakami et al., as applied to claim 4 above, and further in view of Soenksen US 6,711,283 B1.

Luck et al. in view of Murakami et al. as applied to claim 4 above disclose the claimed invention except for wherein the microscope is a confocal microscope. Soenksen teaches in column 9, lines 1-7 the use of confocal microscopy to provide a different examination of microscopic samples. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the microscope of Luck et al. in view of Murakami et al. a confocal microscope as suggested by Soenksen to provide a different examination of microscopic samples particularly with higher image resolution.

Response to Arguments

12. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

13. It is noted by the Examiner that the drawing, specification and claim objections made in the previous Office Action have been withdrawn due to amendment by the Applicant.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LAF
November 16, 2005

MARK A. ROBINSON
PRIMARY EXAMINER